

REMARKS

Claims 4, 5 and 13-18 are pending in this application. By this Amendment, claims 5, 13 and 14 are amended and claim 18 is added. No new matter is added.

Entry of the amendments is proper under 37 CFR §1.116 since the amendments: (a) place the application in condition for allowance for the reasons discussed herein; (b) do not raise any new issue requiring further search and/or consideration; (c) do not present any additional claims without canceling a corresponding number of finally rejected claims; and (d) place the application in better form for appeal, should an appeal be necessary. Entry of the amendments is thus respectfully requested.

I. Claim Rejections under 35 U.S.C. §112

Claim 14 is rejected under 35 U.S.C. §112, second paragraph, for allegedly reciting an indefinite claim term. As claim 14 is amended in response to rejection, withdrawal of the rejection of claim 14 under 35 U.S.C. §112, second paragraph, is respectfully requested.

II. Claim Rejections under 35 U.S.C. §103

Claims 5, 13, 15 and 16 are rejected under 35 U.S.C. §103(a) as unpatentable over U.S. Patent No. 6,570,289 to Liang et al. (Liang) in view of U.S. Patent No. 5,691,590 to Kawai et al. (Kawai). The rejection is respectfully traversed.

Neither Liang nor Kawai, whether considered alone or in combination, disclose or suggest each and every feature recited in the rejected claims. For example, a rotary electric machine, comprising a pair of armature windings mounted in said stator core to be shifted by $\pi/6$ in electric angle from each other; and a pair of three-phase rectifier units, wherein each said armature winding has a first group of Δ -connected three-phase windings having three junctions that are $2\pi/3$ in electric angle different from each other and a second group of three-phase windings having three output ends that are $2\pi/3$ in electric angle different from each other and three input ends respectively connected in series to said junctions of said first

group; and said three output ends of said second group of three-phase windings of each said armature winding are connected to one of said pair of rectifier units, as recited in amended claim 5.

Additionally, neither Liang nor Kawai, whether considered alone or in combination, disclose or suggest a rotary electric machine including a cylindrical stator core having an axial end surface, an armature winding mounted in said stator core and a pair of three-phase rectifier units, wherein said armature winding has a pair of three-phase sub-armature windings and six output terminals respectively connected to said three-phase rectifiers; each of said sub-armature windings comprises a first group of Δ -connected three-phase windings having junctions that are by $2\pi/3$ different in electric angle from each other and a second group of three-phase windings having output ends that are by $2\pi/3$ different in electric angle from each other and are connected to one of said rectifier units and input ends respectively connected in series to said junctions of said first group; and said pair of three-phase sub-armature windings is disposed in said stator core to be shifted by $\pi/6$ in electric angle from each other so that said six output terminals are different in electric angle from each other, as recited in amended claim 13.

It is alleged in the Office Action that Liang discloses a pair of armature windings and the stator core (300). However, reference number 300 refers to the stator circuit as shown in Fig. 5. The stator circuit 300 shows only a single armature winding connected to a single three-phase rectifier circuit 302. The single armature winding is comprised of two sets of three-phase windings. The first set of three-phase windings has windings A_1 , B_1 and C_1 . The second set of three-phase windings has windings A_2 , B_2 and C_2 (col. 4, lines 40-43). Thus, Liang fails to disclose the features as alleged in the Office Action. Additionally, as admitted in the Office Action, Liang does not disclose a pair of three-phase rectifier units.

In addition to the above-described deficiencies, Liang also fails to disclose or suggest the additional feature recited in the rejected claims as amended. Specifically, there is no disclosure or suggestion in Liang to provide a pair of armature windings mounted in a stator core to be shifted by $\pi/6$ in electric angle from each other.

In an effort to overcome the admitted deficiency of the failure of Liang to teach a pair of rectifiers as recited in the rejected claims, Kawai is combined with Liang for allegedly teaching a pair of three-phase rectifier units shown in Figs. 4 and 5 as reference number 23. Although Kawai appears to disclose a pair of armature windings and a pair of three-phase rectifier units, Kawai fails to disclose or suggest the pair of armature windings mounted in the stator core to be shifted by $\pi/6$ in electric angle from each other. Rather, as shown in Fig. 4, the first group of three-phase coils 6a, 6b and 6c, and the second group of three-phase coils 6d, 6e and 6f, are connected in a two star connection. The first group of coils 6a, 6b and 6c induces an alternating current of advanced phase by $\pi/3$ ratings in electric angle as compared to the induced current of the second group of coils 6d, 6e and 6f (col. 4, lines 11-19). Additionally, the electrical output of the dual stator windings are wound giving a phase difference by $\pi/2$ (radian) in electrical angle (col. 4, lines 59-61). Thus, neither Liang or Kawai, whether considered alone or in combination disclose or suggest each and every feature recited in the rejected claims. Therefore, withdrawal of the rejection of claims 5, 13, 15 and 16 under 35 U.S.C. §103(a) is respectfully requested.

Claims 4 and 17 are rejected under 35 U.S.C. §103(a) over the combination of Liang and Kawai as applied to independent claim 13 and further in view of U.S. Patent No. 5,982,068 to Umeda et al. (Umeda); and claim 14 is rejected under 35 U.S.C. §103(a) as unpatentable over Liang and Kawai as applied to claim 13 and further in view of U.S. Patent No. 5,122,705 to Kusase et al. (Kusase). The rejections are respectfully traversed.

Each of claims 4, 14 and 17 are allowable for their dependency on the respective independent base claims, as well as for the additional features recited therein. Further, as neither Umeda or Kusase overcome the deficiencies of Liang and Kawai, none of the applied references, whether considered alone or in combination, disclose or suggest each and every feature recited in the rejected claims. Accordingly, withdrawal of the rejection of claims 4, 14 and 17 under 35 U.S.C. §103(a) is respectfully requested.

III. New Claim

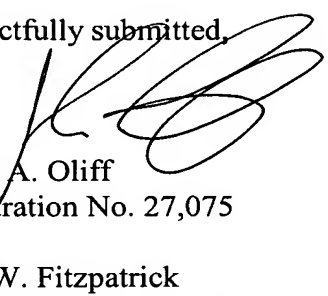
None of the applied references, whether considered alone or in combination, disclose or suggest each and every feature recited in claim 18. For example, none of the applied references disclose or suggest the rotary electric machine as claimed in claim 18, wherein each of said phase-windings has approximately the same number of turns.

IV. Conclusion

In view of the foregoing, it is respectfully submitted that this application is in condition for allowance. Favorable reconsideration and prompt allowance of claims are earnestly solicited.

Should the Examiner believe that anything further would be desirable in order to place this application in even better condition for allowance, the Examiner is invited to contact the undersigned at the telephone number set forth below.

Respectfully submitted,


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Attachment:
Petition for Extension of Time

Date: October 14, 2005

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